

INVESTIGATE RULES OF GAMES

Practice 2

Objective:

To investigate and generate rules for the probabilities of all possible differences between the two numbers if you select two random cards (from 2 sets of 4 consecutive numbers).

Instructions:

In this task, you are required to:

- figure out which difference have what probabilities
- describe these probabilities as general rules
- verify your probability rules by showing theoretical workings.

Hints:

1. You may approach this problem experimentally (by card drawing) or theoretically (considering what the right answer should be without card drawing).
2. You will need to justify your pattern theoretically, but it may be easier to find the pattern by drawing the cards.
3. How are you going to list out all the possibilities?
4. Present your work neatly, tidily and logically.

CRITERION B: INVESTIGATING PATTERNS

Achievement level	IBO published Level Descriptors MYP 1 (Year 6)
1–2 Simple Patterns	The student is able to: i. apply, with teacher support, mathematical problem-solving techniques to recognize simple patterns ii. state predictions consistent with simple patterns.
3–4 General Rule	The student is able to: i. apply mathematical problem-solving techniques to recognize patterns ii. suggest how these patterns work.
5–6 Draw Conclusion	The student is able to: i. apply mathematical problem-solving techniques to recognize patterns ii. suggest relationships or general rules consistent with findings iii. verify whether patterns work for another example.
7–8 Justification	The student is able to: i. select and apply mathematical problem-solving techniques to recognize correct patterns ii. describe patterns as relationships or general rules consistent with correct findings iii. verify whether patterns work for other examples.

****Note:** A task that does not allow students to select a problem-solving technique is too guided and should result in students earning a maximum achievement level of 6 (for MYP years 1 and 2).